Remarks

Claims 2, 8, 13, 15 and 24 are canceled. Claims 1, 6, 10-12, 14, 16-19, 21 and 25-27 are currently amended. Claims 3-5, 7, 9, 20, 22-23 and 28 are original claims. Claim 8 has been recast as new claim 29, claim 15 recast as new claim 30 (with claims 16 and 17 amended to depend from it) and claim 24 recast as new claim 31 (with claims 25 and 26 amended to depend from it). Review and consideration of the application in view of these amendments and the following remarks is respectfully requested.

Claim Objections:

As required, claims 18 and 27 are amended so that the term "MR" appearing in each claim is changed to read --magnetorheological--.

Claim Rejections - 35 U.S.C. §112:

Claims 1-28 stand rejected as being indefinite due to use of the phrase "or the like." Accordingly, claims 1 and 19 have been amended to delete that phrase.

Claims 10-13 and 19 stand rejected as being indefinite due to insufficient antecedent basis for the limitation "said strut." Claims 10-12, 19 and 21 have been amended to change the term "strut" to read --strut module--, for which there is antecedent basis. Claim 13 has been canceled. No new matter has been added.

Claim 8 stands rejected as being indefinite due to insufficient antecedent basis for the limitations "said relative rigid portion" and "said flexible portion." Claim 8 has been recast as new claim 29, having proper antecedent basis for those terms.

Double Patenting:

Claims 1-9 stand provisionally rejected for obviousness-type double patenting over claims 1-25 of co-pending U.S. Patent App. No. 10/645,684. If required, applicant will submit a terminal disclaimer at the appropriate time.

Claim Rejections- 35 U.S.C. §103:

Claims 1-7, 9, 13-14 and 18 stand rejected as being unpatentable over Gross et al. (U.S. Pat. No. 6,598,932) in view of Catanzarite et al. (U.S. Pat. No. 6,070,681). For the following reasons, claims 1, 3-7, 14 and 18 as amended are not anticipated by these references.

Catanzarite et al. discloses a controllable cab suspension in which a magnetorheological (MR) damper is separate from an air spring, rather than a strut in which a damper and an air spring are integrated into a single component. Furthermore, the suspension disclosed in Catanzarite et al. includes an additional linkage 56b (Fig. 4) that extends between bracket assemblies 55b and 55b' to restrain lateral movement.

Gross et al. discloses a strut in Fig. 3 that includes a hydraulic damper 14 and an air spring 9. The damper 9 includes a vessel tube 27 that is attached to the frame, and a piston rod 31 that is attached to the cab. An outer tube 19 is attached to the piston rod 31 and is concentric to the vessel tube 27, although no portion of the outer tube 19 encompasses a portion of the vessel tube 27. The vessel tube 27 retains a concentrically mounted roll tube 23. An air spring bellows 21 is attached to the outer tube 19 and the roll tube 23 to define a spring space 29 that may be pressurized with air.

Undefined element 23a appears to be an annular gap between the vessel tube 27 and the roll tube 23. Undefined element 23b appears to be a coil compression spring retained in annular gap 23a. The function of element 23b is apparently to bias a control element 37 in the upward direction, as viewed in Fig. 3. When the vehicle cab is heavily loaded, a wedge or guide path 39 on control element 37 moves in the downward direction against the force applied by the spring in annular gap 23a and actuates a control valve 15 to increase air pressure applied to the air spring.

The vibration damper 14 disclosed in Gross et al. cannot distribute a bending moment applied to the ends of the strut, and therefore cannot independently resist relative lateral movements between the cab and the frame. The suspension necessarily requires an additional component, a stabilizer 7 (Figs. 1 and 4), arranged transverse to the vehicle

frame to oppose the lateral/roll movements of the cab. Furthermore, the use of a position (height) sensor and a controller, in combination with such a strut is not disclosed or suggested in Gross et al.

It is argued that the vibration damper of Gross et al. discloses the claimed bearing sleeve in the form of element 23a. Applicant respectfully submits that this is not correct. Rather, element 23a is an annular gap shaped to receive a coil spring 23b that is operatively associated with control element 37 for the proper actuation of control valve 15. Accordingly, no bending moment resistance is provided by element 23a; indeed, the vibration damper of Gross et al. lacks a bearing sleeve entirely, let alone a bearing sleeve positioned between the inner and outer tubes of the damper to distribute bending moments as claimed.

Consequently, neither Gross et al. nor Catanzarite et al. discloses or suggests a cab suspension system having a strut module having a bearing sleeve that distributes a bending moment applied to the ends of the strut module.

The cab suspension system of claims 1, 2-7, 9, 13-14 and 18 includes a strut module that combines an MR damper and an air spring into a single component that resists a side-load force and/or bending moment applied to the ends of the strut, such that the strut resists relative lateral movements between the cab and the frame. The strut includes an inner tube that may be attached to the cab, an outer tube that may be attached to the frame and is concentric to the inner tube, and a bearing sleeve positioned between the inner tube and outer tube such that the strut module distributes a bending moment applied to ends of the strut. Inasmuch as the proposed combination of Gross et al. and Catanzarite et al. lack such structure, these claims should be allowed.

Claims 19, 21-23 and 27-28 stand rejected as being unpatentable over Gross et al. in view of Catanzarite et al. It is argued that the proposed combination teaches the use of a height sensor on a mounting flange with a strut module. Amended claim 19 defines a strut module having an inner tube and an outer tube concentric with the inner tube and being shaped to form a slidable connection with the inner tube such that bending

moments applied to ends of the strut module are resisted by and transmitted through the slidable connection between the inner tube and the outer tube. Neither reference teaches or suggests such structure. Therefore, amended claim 19, amended claims 21 and 27, and original claims 22, 23 and 28 that depend from claim 19, should be allowed.

Claims 10-12 and 20 stand rejected as being unpatentable over Gross et al. and Catanzarite et al. and further in view of Peddycord et al. (U.S. Patent No. 6,758,294). It is argued that Peddycord et al. shows that it would be obvious to add a transverse frame element to the structure resulting from the combination of Gross et al. and Catanzarite et al. However, the resulting combination would still lack the bearing sleeve structure of claims 10-12, or the slidable connection between the inner tube and the outer tube of claim 10. Accordingly, claims 10-12 and 20 are not rendered obvious by the proposed combination of references and should be allowed.

Allowable Subject Matter:

Original claims 8, 15-17 and 24-26 stand allowable if rewritten to overcome the rejections under 35 U.S.C. §112 and to include all of the limitations of the base claim and any intervening claims. Claims 8, 15 and 24 have been rewritten as new claims 29, 30 and 31, respectively, and claims 16-17 and 25-26 have been amended to depend from new claims 30 and 31, respectively. Accordingly, these claims should be allowed.

In view of the foregoing argument and amendments, the application appears in condition for allowance and formal notice thereof is respectfully solicited.

Respectfully submitted,

Theodore D. Lienesch
Reg. No. 28,235

THOMPSON HINE LLP
2000 Courthouse Plaza NE
10 West Second Street
Dayton, Ohio 45402-1758
(937) 443-6958

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